

April 30, 1996

Colonel Robert H. Reardon, Jr.
U.S. Army Corps of Engineers
Norfolk District
803 Front Street
Norfolk, Virginia 23510-1096

Attn: Kathy Spencer
Regulatory Branch

Re: Draft Biological Opinion for PCS
PrimeCo, L.P., Permit Application No.
95-5114-09, Suffolk, Virginia

Dear Colonel Reardon:

This responds to your March 26, 1996 request for a copy of the draft biological opinion regarding impacts of PCS PrimeCo, L.P.'s Department of the Army permit application, 95-5114-09, on the Dismal Swamp southeastern shrew (*Sorex longirostris fisheri*), a Federally listed threatened species. The proposed project involves the construction of an antenna tower, electronics shelter, and road in Suffolk, Virginia.

Section 7 of the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.) requires that the U.S. Fish and Wildlife Service conclude formal consultation and deliver the biological opinion to the Federal action agency and applicant within 135 days of receipt of the request for formal consultation. We received the U.S. Army Corps of Engineers' request to initiate formal consultation on this project on March 29, 1996.

When a Federal agency and/or the applicant ask to review a draft biological opinion, the 135-day time frame to submit the final biological opinion continues to apply. Once comments on the draft are received by the Service, the biological opinion is finalized and delivered to the Federal action agency and applicant. If comments on the draft opinion result in major changes or clarifications, a time extension can be requested by the Service. When the Service has not received the comments of the

action agency by the 125th day, the Service checks with the agency and finalizes the biological opinion if the agency does not request an extension. If the Service receives comments after 125 days, the Service automatically has 10 days from the date of receipt to finalize and deliver the opinion.

Please be advised that if a draft opinion is released to an applicant or the public, the document is no longer considered an interagency memorandum exempt from the disclosure requirements of the Freedom of Information Act (5 U.S.C. 552 (b)(5)).

We would appreciate receiving any comments on the attached draft biological opinion at your earliest convenience to allow us to submit the final opinion in a timely manner. Please contact Cindy Schulz of this office at (804) 693-6694 if you have any questions.

Sincerely,

Karen L. Mayne
Supervisor
Virginia Field Office

Enclosure

(CSchulz:4/2/96)
(filename:dprimcbo)

bcc: ARD South, Region 5
CBFO Reading File

DRAFT

Colonel Robert H. Reardon, Jr.
U.S. Army Corps of Engineers
Norfolk District
803 Front Street
Norfolk, Virginia 23510-1096

Attn: Kathy Spencer
Regulatory Branch

Re: PCS PrimeCo, L.P., Permit
Application No. 95-5114-09, Suffolk,
Virginia

Dear Colonel Reardon:

The U.S. Fish and Wildlife Service has reviewed the Department of the Army permit application, 95-5114-09, submitted by PCS PrimeCo, L.P., to construct an antenna tower, electronics shelter, and road in Suffolk, Virginia. Your March 26, 1996 request for formal consultation was received on March 29, 1996. This document represents the Service's biological opinion on the effects of that action on the Dismal Swamp southeastern shrew (*Sorex longirostris fisheri*) in accordance with Section 7 of the Endangered Species Act of 1973, as amended, (16 U.S.C. 1531 et seq.). The Dismal Swamp southeastern shrew has not been documented within the project site, but the applicant has chosen to assume this species is present in areas with appropriate habitat. A complete administrative record of this consultation is on file in this office.

I. CONSULTATION HISTORY

- | | |
|----------|---|
| 02-27-96 | The Service received a letter from Stokes Environmental Associates, Ltd. requesting information on Federally listed species and critical habitat within the project area. |
| 03-19-96 | The U.S. Army Corps of Engineers called to determine if we had received information regarding this project from Stokes Environmental Associates, Ltd. |
| 03-20-96 | The Service recommended to the Corps, via a telephone conversation, that a survey be conducted for the Dismal Swamp southeastern shrew at the project site. |
| 03-29-96 | The Service received the Corps request to initiate formal consultation and receive a draft of the biological opinion. |

II. BIOLOGICAL OPINION

DESCRIPTION OF PROPOSED ACTION

The applicant proposes to construct a fenced-in area containing an unguyed antenna tower, a small electronics shelter, and a gravel road on 1,500 square feet of land approximately 600 feet north of U.S. Route 58 and 2,000 feet west of the Chesapeake/Suffolk City lines, in Suffolk, Virginia (Figure 1). The project purpose is to construct a communication transmitter and receiver for telephone and radio to provide services to the public within the vicinity of the project in Suffolk and Chesapeake.

Construction of this facility will entail clearing and grading of 1,500 square feet (0.034 acres) of palustrine forested (PFO1B) wetlands. The proposed gravel road will measure approximately 10 feet by 27 feet. An area approximately 12 feet by 27 feet will be filled for the installation of the electronics shelter and antenna tower. The entire area is proposed be fenced-in. Silt fencing will be installed to minimize erosion during and immediately after construction. Work on the project will take a maximum of one month to complete. After completion, the project site will be visited occasionally for maintenance of the tower and electronic building. It will be restricted from public access, thus minimizing potential new disturbance both on the project site and in surrounding areas. The applicant has minimized wetland impacts on this site by examining and attempting to purchase a variety of other sites in the vicinity, and by constructing the project on the minimum land area possible for this type of project.

The applicant has proposed to preserve existing shrew habitat at a ratio of 2:1 to compensate for impacts to the Dismal Swamp southeastern shrew. The proposed site is located on the perimeter of an approximately 240-acre block of forested wetlands northwest of the junction of Big Entry and Portsmouth Ditches in Chesapeake, Virginia (Figure 2). The area is bordered by the Great Dismal Swamp National Wildlife Refuge to the south and Portsmouth Ditch to the east. The perimeter of the block was ditched in the early 1970s. The entire block of land was logged in the middle 1970s. Most of this 240-acre parcel is jurisdictional forested wetlands (PFO1A/C/E) dominated by sapling stage red maple (*Acer rubrum*), sweet gum (*Liquidambar styraciflua*), and black gum (*Nyssa sylvatica*). Dominant shrub species include wax myrtle (*Myrica cerifera*), and giant cane (*Arundinaria gigantea*). Honeysuckle (*Lonicera japonica*) and greenbriar (*Smilax rotundifolia*) are common. Dominant herbaceous species include sedges (*Carex* spp.), cinnamon fern (*Osmunda cinnamomea*), and Virginia chain fern (*Woodwardia virginica*). This forested wetland is hummocky with many small drainage patterns. Most trees in this area are shallow-rooted with multiple stems, suggesting a morphological adaptation to prolonged soil saturation. Soils are consistently saturated within 12 inches of the surface. The site is mapped as Portsmouth mucky loam (Typic Umbraquults), which is a hydric soil. A typical undisturbed profile consists of 10-24 inches of very dark brown friable mucky loam (actually a histic epipedon), followed by 3-9 inches of sandy clay loam, and then a thick layer of light gray loose sand.

RANGEWIDE STATUS OF THE SPECIES

Life History

The Dismal Swamp southeastern shrew is a small mammal that weighs less than 0.2 ounces and measures approximately four inches in length. Little is known about the life history of the shrew. However, the species' life history is likely similar to that of the more common southeastern shrew (*S. l. longirostris*). Based on a few studies, it appears that southeastern shrews average approximately four young per litter (U.S. Fish and Wildlife Service 1994). Pregnant southeastern shrews have been found in Indiana from 8 April to 25 September and in Alabama and Georgia from 31 March to 6 October (U.S. Fish and Wildlife Service 1994). Shrews of the genus *Sorex* usually have at least two litters per year (Churchfield 1990). It is likely that young shrews remain in the nest for their entire period of growth and development and are nearly adult size when they leave the nest (U.S. Fish and Wildlife Service 1994). Southeastern shrews feed mainly on small-sized invertebrates, but consume some vegetation (U.S. Fish and Wildlife Service 1994). Typically, shrews forage intermittently throughout the day and night in all seasons and seem to have highest levels of activity associated with rainfall and periods of high humidity. Much of their foraging occurs in leaf litter or in tunnels in the upper layers of the soil (U.S. Fish and Wildlife Service 1994). Predators include barred and barn owls, domestic cats, and occasionally snakes, domestic dogs, and opossums (French 1980).

The Dismal Swamp southeastern shrew is found in a range of habitats including recent clearcuts, regenerating forests, young pine plantations, grassy and brushy roadsides, young forests with shrubs and saplings, and mature pine and deciduous forests (U.S. Fish and Wildlife Service 1994). The shrew is likely to exist at highest densities in early successional wetland habitats, such as cane stands; shrub-dominated areas; and young, open forests that retain a fairly dense herbaceous understory. The shrew also occurs at high densities within cleared rights-of-way, such as those used for utility lines, as these areas often contain early successional habitats such as scrub-shrub wetlands. Mature wetland forests also provide habitat diversity important to the integrity and dynamic structure of shrew populations across their entire range. Rose (1983) found that the shrew was most abundant in mid-successional, 12- to 15-year-old regenerating forests having a dense understory, moist organic soils, and moderate leaf litter.

Status of the Species Within its Range

The distribution of the Dismal Swamp southeastern shrew is considered coincidental with the boundaries of the historic Dismal Swamp, an extensive contiguous wetland complex that once occupied most of the low-lying land between Norfolk, Virginia and the Albemarle Sound in North Carolina. Historically, this wetland complex was maintained in a variety of successional stages (such as marshes, canebrakes, pocosins, and forest) by natural fires. The original Dismal Swamp ecosystem has been greatly reduced in size because of urban development and the clearing and draining of land for agriculture and silviculture. Most of the remaining wetlands are forested. Approximately 197,680

acres of these wetlands remain, more than half of which are preserved by the Service as the Great Dismal Swamp National Wildlife Refuge, created in 1974, which is in Virginia and North Carolina. The Service is attempting to restore some of the vegetational and successional diversity to the portion of the Dismal Swamp ecosystem within the Refuge. The Great Dismal Swamp State Park in North Carolina provides an additional 22 square miles of shrew habitat. There are additional areas of protected shrew habitat such as the North Landing River Preserve and the Northwest River Park in Virginia and Elizabeth City State University's Dismal Swamp Wetland in North Carolina.

Outside the protected areas, remnants of the Dismal Swamp are rapidly disappearing in southeastern Virginia due to development associated with the Hampton Roads metropolitan area (U.S. Fish and Wildlife Service 1994). In North Carolina, agricultural and silvicultural conversion are the main causes of habitat loss. "In the vicinity of Elizabeth City, North Carolina, for example, two tracts totaling some 32,000 acres of swamp have been cleared and drained within the past 20 years. Besides these contiguous tracts, many smaller areas within the historic Dismal Swamp of North Carolina have been ditched and cleared in a piecemeal fashion. In Virginia, a comparison of U.S.G.S. 7.5-minute topographic maps to recent aerial photography revealed a collective loss of some 2,600 acres of forested land, scattered over four maps portraying the Dismal Swamp (S. Martin, U.S. Army Corps of Engineers, pers. comm. 1993)" (U.S. Fish and Wildlife Service 1994).

Threats to the Species

The main reasons for the shrew's decline are habitat loss and modification and possible loss of genetic integrity through interbreeding with the more common upland subspecies (U.S. Fish and Wildlife Service 1994). "It is presumed that the Dismal Swamp southeastern shrew developed its distinctive size and coloration while geographically or ecologically isolated within the Great Dismal Swamp during the Holocene (Handley 1979). The recent human-induced progression toward homogenous mature hardwood forest, more representative of habitat conditions of the surrounding region, leads to the possibility that the more common and presumably more generally adapted...subspecies could invade the Dismal Swamp and genetically overwhelm the existing populations of *S. l. fisheri*, which are more specifically adapted to historic swamp conditions" (U.S. Fish and Wildlife Service 1994).

Recovery Accomplishments

Recently, new evidence suggests that the Dismal Swamp southeastern shrew may occur throughout the coastal plain of North Carolina, at least as far south as Wilmington (U.S. Fish and Wildlife Service 1994). However, until this can be substantiated through additional distribution and taxonomy studies, the shrew will remain on the Service's list of endangered and threatened wildlife and plants. As such, the shrew, and its habitat, will continue to receive protection pursuant to the ESA until it is removed from this list.

ENVIRONMENTAL BASELINE

As defined in 50 CFR 402.02 "action" means all activities or programs of any kind authorized, funded, or carried out, in whole or in part, by Federal agencies in the United States or upon the high seas. The "action area" is defined as all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action. The direct and indirect effects of the actions and activities resulting from the Federal action must be considered in conjunction with the effects of other past and present Federal, State, or private activities, as well as the cumulative effects of reasonably certain future State or private activities within the action area. The action area for this biological opinion has been determined by the Service to be the 0.034-acre project area.

Status of the Species - The proposed project site is a portion of the Kirk Timber and Farming Company Property, a 3,343-acre tract of land that surrounds the site, and consists of predominantly PFO1B, C, and PFO4B forested wetlands. The project site is mapped PFO1E. An existing gravel road borders the site to the immediate west. A grassed field is located approximately 300 feet east of the site. The entire site, and most of its vicinity, is underlain by Torhunta loam (Typic Humaquept), a poorly drained hydric soil typically found on flats along the perimeter of the Dismal Swamp. These soils are deep, with a very dark brown-black loam 16 inches thick. Deloss mucky loam (Typic Umbraquult) is another soil type found within a quarter-mile of the site. Deloss soils are deep and very poorly drained hydric soils, and are also found on broad flats primarily around the perimeter of Dismal Swamp.

The site occurs at an elevation of approximately 25 feet above mean sea level, and is at the headwaters of the Dismal Swamp. The entire 0.034-acre parcel is jurisdictional wetlands. Vegetation on the site is dominated by sweet gum and red maple in the canopy, giant cane, fetter bush (*Leucothoe racemosa*), and royal fern (*Osmunda regalis*) in the understory. Nondominant species include Joe pyeweed (*Eupatorium maculatum*), dock (*Rumex* spp.), wax myrtle, American elm (*Ulmus americana*), sweet bay (*Magnolia virginiana*), water oak (*Quercus nigra*), sedges (*Carex* spp.), highbush blueberry (*Vaccinium corumbosum*), and greenbriar (*Smilax rotundifolia*). The site is hummocky with only slight variations in topography. Hydrological indicators include standing water, drainage pattern in the wetlands, shallow rooting, hypertrophied lenticels on tree trunks and roots, and saturation with the upper 12 inches of the surface. The leaf litter layer is one of three inches thick, and the soil surface contains a layer of greasy black organic matter.

The action area contains appropriate habitat for the Dismal Swamp southeastern shrew, and it has been documented with 5,000 feet miles of the action area. The applicant did not conduct a shrew survey within the action area and has chosen to assume that the shrew is present.

Effects of the Action - Direct impacts to the shrew associated with this project include the potential to crush shrews with vehicles and heavy equipment, resulting in death or injury, while clearing vegetation for and constructing the antenna, electronics building, and road. The shrew will also be directly affected

by the permanent loss of 0.034 acres of habitat. While there is likely to be a loss of individual shrews, because there will only be a minor amount of completely unusable habitat created and no habitat fragmentation is expected, this loss should not affect the genetic viability or range of the species.

"Because these shrews have a high reproductive potential and rapid maturation rate, limited collection of individuals is not detrimental to healthy populations, although more widespread mortality associated with loss or permanent alteration of habitat continues to constitute the primary threat to the survival of this subspecies." (U.S. Fish and Wildlife Service 1994).

Cumulative Effects - Cumulative effects include the effects of future State, local, or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to Section 7 of the ESA. We are not aware of any future State, local, or private actions planned for this site.

CONCLUSION

After reviewing the current status of the Dismal Swamp southeastern shrew throughout its range and in the action area, the environmental baseline for the action area, the effects of the proposed clearing and construction, and the cumulative effects, it is the Service's biological opinion that the construction of the antenna tower, electronics shelter, and gravel road, as proposed, is not likely to jeopardize the continued existence of the Dismal Swamp southeastern shrew. No critical habitat has been designated for this species, therefore, none will be affected.

III. INCIDENTAL TAKE STATEMENT

Sections 4(d) and 9 of the ESA, as amended, prohibit taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or attempt to engage in any such conduct) of listed species of fish or wildlife without a special exemption. Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns such as breeding, feeding, or sheltering. Harass is defined as actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns, which include, but are not limited to, breeding, feeding, or sheltering. Incidental take is any take of listed animal species that results from, but is not the purpose of, carrying out an otherwise lawful activity conducted by the Federal agency or applicant. Under the terms of Section 7(b)(4) and Section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered a prohibited taking provided that such taking is in compliance with the terms and conditions of this incidental take statement.

AMOUNT OR EXTENT OF TAKE

Previous studies have indicated that "mature forests with closed canopies...have densities of only 1-4

[shrews] per hectare” which is “only about one-fourth or less the densities of southeastern shrews compared to early successional stage habitats dominated by grasses and shrubs” (Rose 1995). Therefore, the Service anticipates that no more than one Dismal Swamp southeastern shrew will be taken during vegetation clearing for and construction of the proposed project. The incidental take is expected to be in the form of direct killing, harassment, or harm.

REASONABLE AND PRUDENT MEASURES

The measures described below are nondiscretionary, and must be implemented by the Corps so that they become binding conditions of any permit issued to the applicant in order for the exemption in Section 7(o)(2) to apply. The Corps has a continuing duty to regulate the activity covered by this incidental take statement. If the Corps (1) fails to require the applicant to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit, and/or (2) fails to retain oversight to ensure compliance with these terms and conditions, the protective coverage of Section 7(o)(2) may lapse. The Service considers the following reasonable and prudent measure(S) to be necessary and appropriate to minimize take of the Dismal Swamp southeastern shrew.

1. Vegetation clearing and use of heavy equipment for construction should be minimized to reduce soil and leaf litter disturbance.
2. Impacts to wetlands should be minimized.
3. Avoid use of pesticides and herbicides.

TERMS AND CONDITIONS

In order to be exempt from the prohibitions of Section 9 of the ESA, the Corps must comply with the following terms and conditions, which implement the reasonable and prudent measures described above. These terms and conditions are nondiscretionary.

1. The following measures will be taken during clearing, construction, and maintenance activities associated with the project:
 - a. No vehicle or equipment use or placement or stockpiling of materials will occur outside of the 0.034-acre impact area, except on existing roadways, active agricultural fields, maintained lawns, or previously unvegetated areas.
 - b. No ground disturbance or vegetation clearing will occur outside of the 0.034-acre impact area.

- c. Stumps/root wads will not be removed after vegetation clearing, if practicable.
 - d. Initial and maintenance clearing of vegetation in wetlands will be done by hand where practicable.
 - e. All work in wetlands will be done on mats where practicable.
 - f. No use of broad scale or aerial herbicide or pesticide applications.
2. The applicant is required to notify the Service before initiation of construction and upon completion of the project at the address given below. All additional information to be sent to the Service should be sent to the following address:
- Virginia Field Office
U.S. Fish and Wildlife Service
P.O. Box 480
U.S. Route 17, Mid-County Centre
White Marsh, VA 23183
Phone: (804) 693-6694
Fax: (804) 693-9032
3. Care must be taken in handling any dead specimens of the Dismal Swamp southeastern shrew that are found in the project area to preserve biological material in the best possible state. In conjunction with the preservation of any dead specimens, the finder has the responsibility to ensure that evidence intrinsic to determining the cause of death of the specimen is not unnecessarily disturbed. The finding of dead specimens does not imply enforcement proceedings pursuant to the ESA. The reporting of dead specimens is required to enable the Service to determine if take is reached or exceeded and to ensure that the terms and conditions are appropriate and effective. Upon locating a dead specimen, initial notification must be made to the following Service Law Enforcement office:

Division of Law Enforcement
U.S. Fish and Wildlife Service
P.O. Box 187
Yorktown, VA 23690
(804) 890-0003

The reasonable and prudent measures, with their implementing terms and conditions, are designed to minimize incidental take that might otherwise result from the proposed action. With implementation of these measures the Service believes that impacts to shrew habitat have been minimized.

IV. CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the ESA directs Federal agencies to utilize their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to further minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans and other recovery activities, or to develop information to benefit the species.

The Service recommends that the Corps conduct a survey for the Dismal Swamp southeastern shrew within the action area before clearing and construction are undertaken. No surveys have been conducted to the north or west within the vicinity of the action area. This is the third project in this area that has required a Corps' permit and surveys within this area would be useful in determining if take is actually likely to result from these small projects. The Technical/Agency Draft Recovery Plan for this species indicates that "more information is needed on the distribution and abundance" of the shrew outside the Refuge (U.S. Fish and Wildlife Service 1994). Any information on shrew distribution or abundance obtained from the action area would enhance the recovery of this species. The Service would be pleased to work with the Corps to design such a study.

The Service also recommends that the Corps work with the applicant to ensure that the proposal to preserve 0.068 acres of shrew habitat is carried out and that the area is placed in a permanent conservation easement.

In order for the Service to be kept informed of actions that minimize or avoid adverse effects or benefit listed species or their habitats, the Service requests notification of the implementation of any of these conservation recommendations by the Corps.

V. REINITIATION - CLOSING STATEMENT

This concludes formal consultation on the action outlined in the Corps' request. As provided in 50 CFR 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

Unless information in this biological opinion is protected by national security or contains confidential business information, the Service recommends that you forward a copy to the following agency:

Virginia Department of Game and Inland Fisheries
Environmental Services
P.O. Box 11104
Richmond, VA 23230

If this opinion is not provided by the Corps and does not contain national security or confidential business information, the Service will provide a copy to this State agency ten business days after the date of this opinion.

The Service appreciates this opportunity to work with the Corps in fulfilling our mutual responsibilities under the ESA. Please contact Cindy Schulz of this office at (804) 693-6694 if you require additional information.

Sincerely,

Karen L. Mayne
Supervisor
Virginia Field Office

Enclosures

DRAFT

LITERATURE CITED

- Churchfield, S. 1990. The natural history of shrews. Cornell University Press; Ithaca, NY.
- French, T.W. 1980. Natural history of the southeastern shrew, *Sorex longirostris* Bachman. American Midland Naturalist 104:13-31.
- Handley, C.O., Jr. 1979. Mammals of the Dismal Swamp; a historical account. Pages 297-357 in P.W. Kirk, Jr., eds., The Great Dismal Swamp. University Press of Virginia; Charlottesville, VA.
- Rose, R.K. 1983. A study of two rare mammals endemic to the Virginia/North Carolina Dismal Swamp. Unpublished report prepared for U.S. Fish and Wildlife Service; Newton Corner, MA.
- Rose, R.K. 1995. Final report of the field study to determine the presence of the federally threatened Dismal Swamp southeastern shrew (*Sorex longirostris fisheri*) on the property of Southeastern Virginia et al. and the property known as Fountaingate, located near London Bridge Road between Lake Placid Estates and the Piney Ridge subdivision in Virginia Beach, Virginia. Submitted to Thomas A. Stierhoff, Stokes Environmental Associates, Ltd., Norfolk, VA.
- U.S. Fish and Wildlife Service. 1994. Dismal Swamp southeastern shrew (*Sorex longirostris fisheri*) recovery plan. Technical/agency draft. Hadley, MA. 51pp.